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GB 2160759 A · GB 2160085 A

(58) Field of Search
UK CL (Edition K) A3V, A6S, G5J JEBA
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(54) Novelty headgear apparatus

(57) A baseball cap is fitted with an electronic sound producing device. The neb 23 of the cap is stiffened with cardboard 30, and the device resides in cut-outs formed in the cardboard stiffener, whereby the device lies in a protected environment. An actuator switch 45 is located front and centre in a cut-out in the neb, where it will be squeezed by a person grasping the cap for placement on the head. The device thereby is activated automatically when the person picks up the hat. The sound producer emits pre-recorded voice/music, or simple tone-tunes. The sound lasts for a few seconds, and is switched off automatically by a timer.

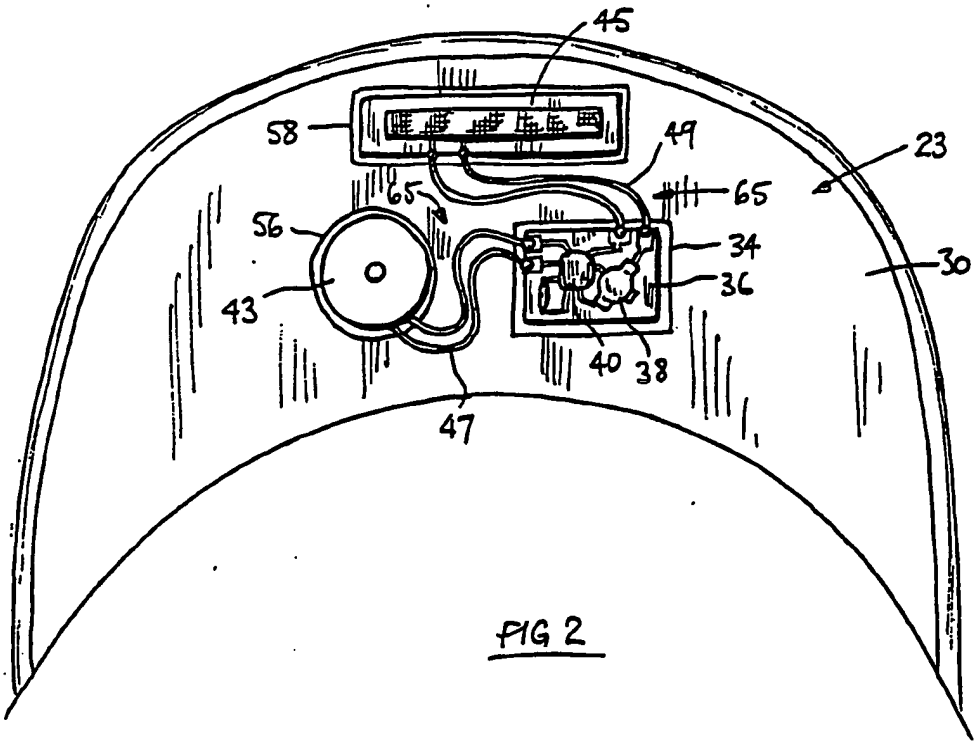

FIG 2

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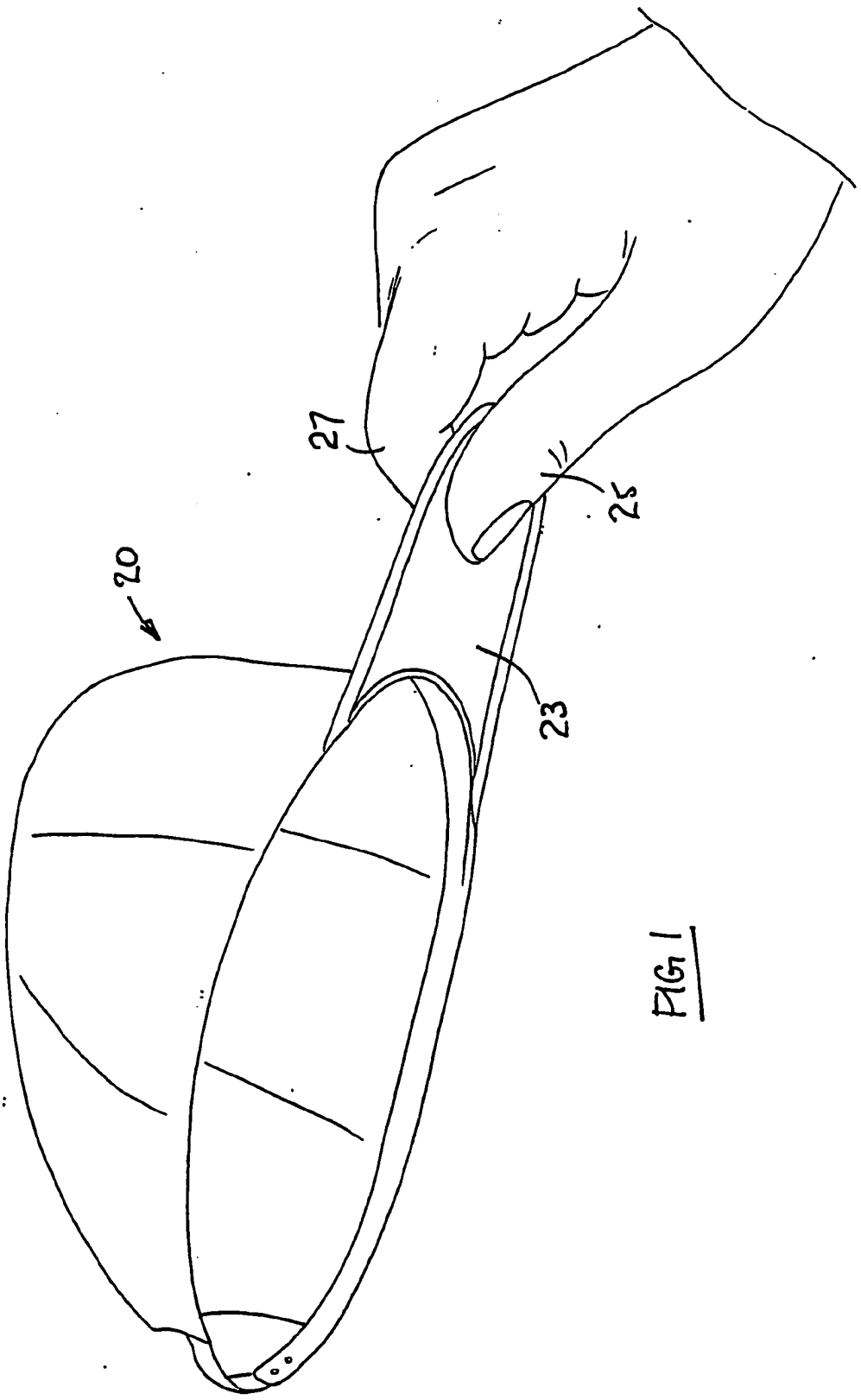


FIG 1

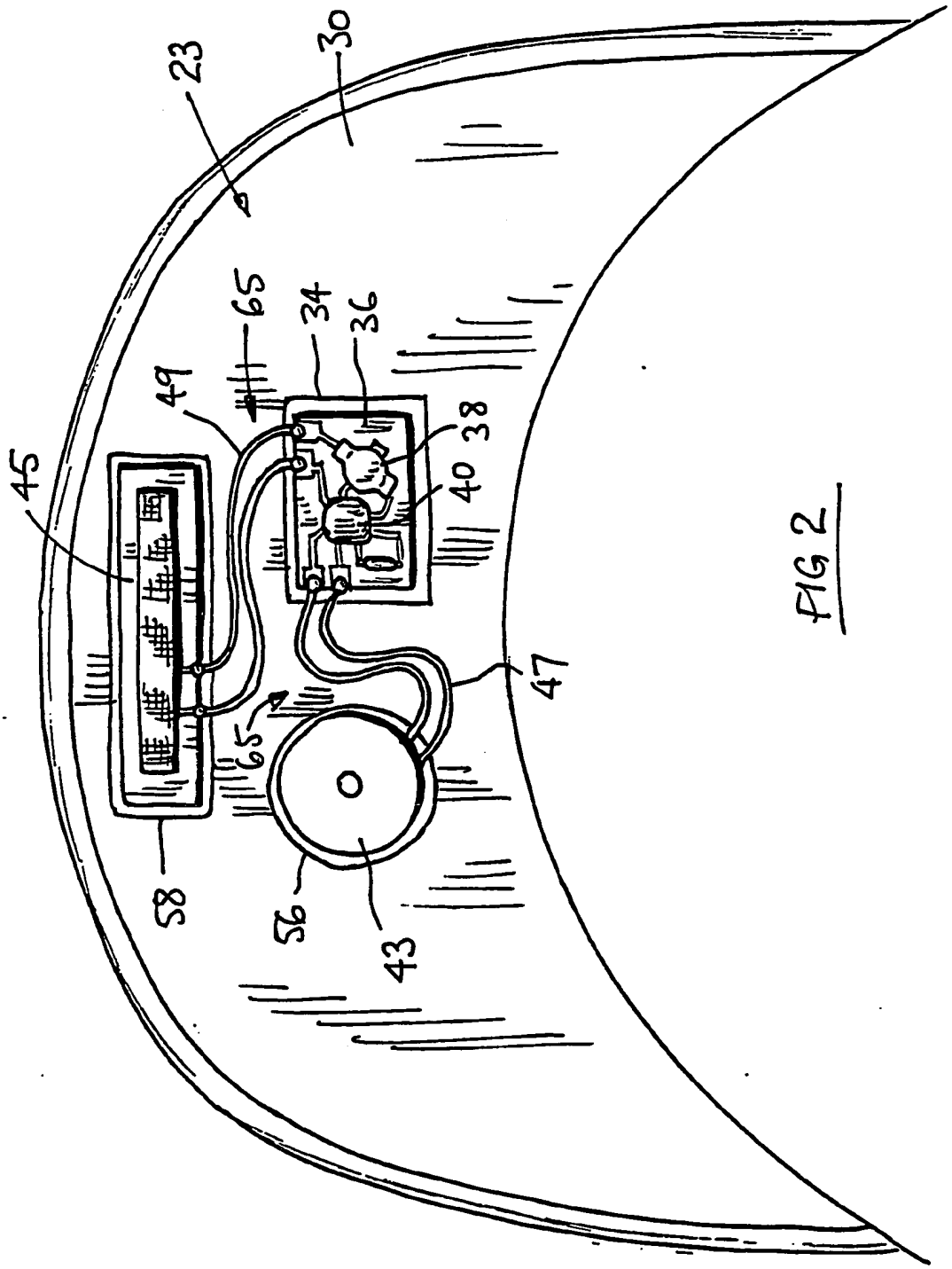
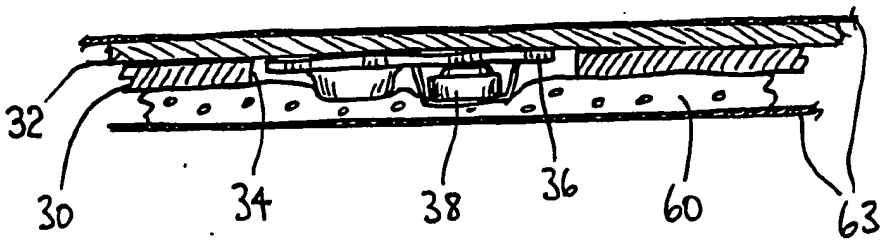


FIG 2

FIG 3



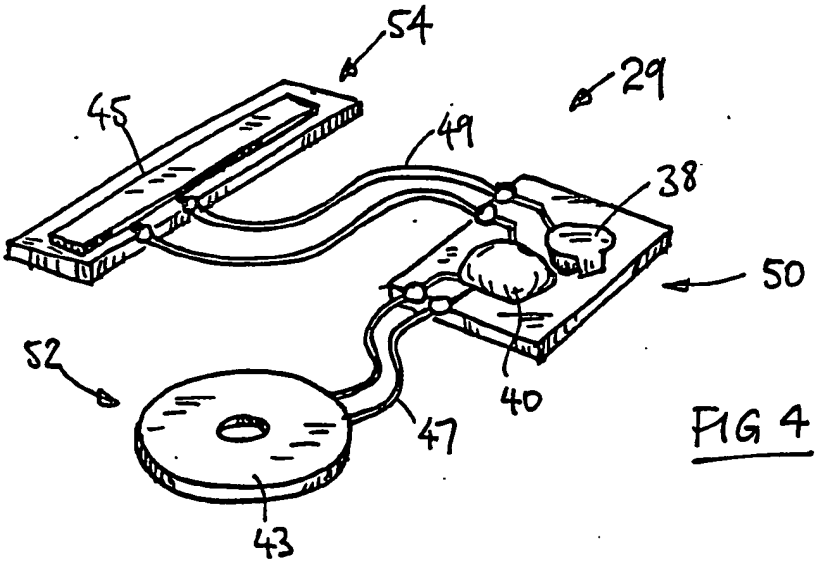


FIG 4

Title: **NOVELTY HEADGEAR APPARATUS**

This invention relates to novelty items, and in particular to an item of headgear in combination with a sound producing device.

General Features of the Invention

In the invention, the combination is caused to emit a sound when the headgear is placed on, or removed from, a person's head. The invention does not require the person to carry out any kind of switching action, as a separate action when activating the device; in the invention, the device is automatically activated to produce sound purely as a result of the action by the person of grasping the headgear and holding the headgear in the hand, and of placing the headgear on the head.

The apparatus includes a sound producing device, which is electrical in nature, having a battery, loudspeaker, etc. The invention does not require the electrical components to be wired into the headgear: rather, the components may all be manufactured, assembled, wired together, and tested as a unit, before the sound producing device, as a unitary whole item, is assembled into the headgear.

In the invention, the sound producing device is finished prior to assembly into the headgear, and there is no need for further wiring or electrical adjustment. In fact, the invention permits the sound producing device to be manufactured and finished at an electrical specialist factory, shipped to another factory (even to another country) and there assembled into, and sewn into, the headgear.

As far as insertion of the sound producing device into the headgear is concerned, the workers need to have skill only in stitching headgear. The invention permits the sound producing device to be simply dropped into a suitable receptacle in the headgear, as a finished unit, and stitched into place. The workers are not required to have any skill in electrical assembly, other than simply stitching in the whole sound producing device into the headgear.

The sound producing device includes a battery, but the intention is that the battery is not replaceable. The sound producing device preferably is concealed within the headgear, and it would make for considerable complication if access had to be provided for changing the battery.

The invention permits that the person, in operating the device, need not be conscious of the device being present. Activation of the device takes place automatically without any manual or purposeful action by the person, except, as mentioned, the action by the person of picking up the headgear and placing the headgear upon his/her head.

The sound producing device in the invention comprises a loudspeaker, an activator switch, a battery, and a sound generator and controller, preferably in the form of a chip. Preferably, the chip and the battery are mounted on a circuit board. The loudspeaker and the switch may be physically separate from the circuit board, but attached thereto with electrical wires.

Sound producing devices are available in two basic forms. In the first, the device produces only single-frequency tones, one at a time. This type may be programmed to emit tunes with the correct pitches and rhythms, but without chords or multiple frequencies.

The second type is basically a recorder, in which recordings are stored digitally. In this type, the sounds are recorded into the chip by means of a microphone. The sounds may be voice, or music, or indeed any sound that can be recorded. The recording type is more costly, more complex, and requires more battery capacity, but its performance is much more versatile and sophisticated.

When the sound is to be a voice message, the message may be pre-recorded and programmed into the chip at the place where the sound producing device is manufactured. Such universally-applicable messages as *Happy Birthday* or *Don't Drink and Drive* can be programmed into the device in this case. Alternatively, the chip may be of the kind in which messages can be recorded, erased, and re-recorded. In this case, the message may be put in by any person who possesses a suitable recording unit. As an example, a shop that sells the headgear may record in the purchaser's own name.

However, even with the re-recordable unit, it is preferred to record the message prior to sewing the device into the headgear. But at least the recording can be entered into the device, still without requiring any electrical assembly skills in the part of the workers making the headgear. Thus, for example, the re-recordable unit is especially applicable to a sports team, which can record the team's rallying call or slogan, and then sell the headgear to supporters.

The invention is particularly suitable for incorporation into the type of headgear known as a baseball cap. Such a cap has a stiff peak or neb, and it is recognised that the sound producing device may be incorporated into the neb of a baseball cap in such a manner as to be concealed or substantially

concealed within the thickness of the neb.

The usefulness for advertising purposes needs little elaboration, particularly when it is borne in mind that baseball caps are already commonly sold with a badge or the like promoting a commercial product or company. The visual advertising message of the badge is much enhanced by the presence of the same message in sound.

The apparatus includes a timer, by means of which the sound producing device is switched off after a pre-determined period of time, for example a few seconds. Where the act of picking up the hat and placing it on the head is effective to automatically activate the sound producing device, the effect would be somewhat negated if the person then had to fumble around with a manual switch in order to turn off the device.

Besides, if a switch were to be provided for the purpose of turning off the device, there would be the difficulty of incorporating the switch into the headgear, as this would undoubtedly require the workers who stitch in the device to have some electrical assembly skills.

It would be possible to arrange, for example, that the sound producing device continued to emit sound so long as the person is activating the activator switch, and then for the sound producing device to cease emitting sound when the person released the activator switch. However, it is preferred that the activator switch should function simply as a push-button: that is to say, when the person presses the activator switch, this action actuates the sound producing device into a cycle, in which the tune or message is replayed for a pre-set time period, and then stops, irrespective of for how long, or how short,

the person keeps on pressing the switch.

It is recognised that a simple press-switch does not need to be attached into a housing or other means for holding the switch steady during operation of the switch. In fact, a press-switch or squeeze switch can be simply dropped into a suitable recess formed in the cap, and can be expected to be retained thereby securely enough for operation. By contrast, a toggle switch, for example, would require to be mounted in a special housing of some kind.

Detailed Description of Preferred Embodiments

By way of further explanation of the invention, exemplary embodiments of the invention will now be described with reference to the accompanying drawings, in which:

Fig 1 is a view of a person in the act of placing a cap on the head, the person grasping the cap in the hand;

Fig 2 is a plan view (from underneath), shown partly in cut-away, of a portion of the brim of the cap of Fig 1;

Fig 3 is a cross-sectional view on the line 3-3 of Fig 2;

Fig 4 is a pictorial view of a sound producing device, which is included in the cap of Fig 1.

The items shown in the accompanying drawings and described below are examples which embody the invention. It should be noted that the scope of

the invention is defined by the accompanying claims, and not necessarily by specific features of exemplary embodiments.

Fig 1 shows a baseball cap 20, being a cap of the kind that includes a hard, rigid peak or neb 23. As shown in Fig 1, in placing the cap on the head, a person grasps the neb 23 between finger and thumb.

Almost invariably, the person naturally places the thumb 25 in the centre of the front of the neb 23, the thumb underneath the neb, and the fingers 27 above. The same manner of grasping and holding the cap applies also when the person removes the cap from the head.

A sound-producing device 29 is incorporated into the neb 23 of the cap 20. As will be explained, when the person grasps the neb 23 in the manner illustrated, he/she activates the device 29, thereby causing the device to emit a sound.

The structure of the neb 23 is shown in plan in Fig 2 and in cross-section in Fig 3. The neb is formed with two sheets of stiffening board 30,32, such as cardboard, which give general rigidity to the neb. One of the stiffening boards, in this case the lower one of the boards 30, is formed with cut-outs 34. These cut-outs in the lower stiffening board are so dimensioned and arranged as to act as receptacles for the components of the sound-producing device 29.

As shown in Fig 4, the sound producing device 29 is a self-contained, operational unit; that is to say, the sound producing device can be manufactured, assembled, and tested as a finished, operating item before

being installed into the cap 20. The sound producing device is so arranged as to require no wiring or other kind of electrical assembly, upon installation into the cap. The pre-manufactured and tested sound producing device 29 is simply dropped, as a unit, into the receptacles formed by the cut-outs 34 in the stiffening board 30 of the neb 23.

The sound producing device 29 includes a main circuit board 36, on which are affixed a battery 38 and an integrated circuit chip 40. The chip 40 may be of the kind which generates tones (one frequency at a time) in sequence, thereby creating a pre-set tune. Alternatively, the chip 40 may be of the kind in which a recording (from a microphone) is digitised in, and stored in, the chip. The sounds in this case may be voice or music. The single-tone generator chip is rather limited as regards versatility, but has the advantage of simplicity, and of requiring a smaller battery 38 capability than the much more complex and powerful voice/music chip.

In combination with other electrical components on the circuit board 36, the chip 40 controls the play-back of the recording upon being activated. The chip also includes a delay or timer, by means of which the sound may be set to automatically stop after a predetermined delay of, say, a few seconds.

The sound producing device 29 includes also a loudspeaker 43, and an activator switch 45. These components are not mounted on the main circuit board 36, but are attached thereto by means of the wires 47,49 as shown. The sound producing device 29 therefore is in three portions, a battery/chip portion 50, a loudspeaker portion 52, and a switch portion 54. The loudspeaker and the switch portions fit into separate cut-outs in the lower stiffening board 30.

No assembly-wiring of the loudspeaker 43 and switch 45 are required; as mentioned, the components simply drop into the cut-outs 56,58.
The sound producing device 29 as shown in Fig 4, being in three portions 50,52,54, might be thought to be vulnerable to damage from abuse. However, the device is built into the neb 23 of the cap 20, and the portions of the device are housed snugly in the receptacles or cut-outs 34,56,58 therein, with the result that the device is substantially protected and isolated from damage.

The presence of the cut-outs 34,56,58 of course make the neb 23 less rigid. However, it may be noted that three smaller cut-outs make less of a difference to the rigidity of the neb than would one larger cut-out.

The three portions 50,52,54 of the sound producing device 29 may be glued or potted into position on the upper stiffening board 32. However, the portions of the device may instead simply be placed in the cut-outs 34,56,58. When the neb is sewn up, the portions will be held in place.

The neb includes a layer of plastic foam 60, which lies beneath the lower stiffening board 30. (Such a layer of foam is common in the nebs of conventional caps.) The foam 60 tends to snag the components of the sound producing device 29, thereby tending to hold the device against movement.

To complete the neb 23, the usual layers of appropriate fabric 63 are applied to the top and bottom of the neb, and stitched into place.

As mentioned, the three portions 50,52,54 of the sound producing device 29 are housed in three separate cut-outs 34,56,58 in the lower stiffening board

30. To maintain a good rigidity in the neb 23, these cut-outs preferably should not be joined together; that is to say, a bridge of cardboard should be left uncut between the cut-outs, as shown at 65. The wires 47,49 joining the loudspeaker and switch portions 52,54 to the main board 36 may be run over the bridges 65, the wires being accommodated within the thickness of the foam 60. The wires 47,49 are held in place, to the small extent needed, by the pressure of the foam.

Claims

CLAIM 1. Novelty apparatus, comprising an item of headgear in combination with a sound producing device, wherein:

the sound producing device includes electrical circuit components, including an activator switch, a battery, a loudspeaker, and an electronic sound processing unit;

the activator switch is of the kind in which electrical switching is effected by a person manually pressing the activator switch;

the components are placed in such a physical arrangement that the sound producing device is of a flat, slim, configuration;

the sound producing device is positioned within the brim of the item of headgear, and is so arranged therein as to lie substantially within the thickness of the said brim;

the activator switch is so positioned in the brim as to lie in the hand-grip of a person when grasping the brim in order to apply the item of headgear to the head;

the nature of the activator switch is such that the switch is activated by the action of the person in grasping the brim;

whereby the sound producing device is activated automatically by the action of a person in grasping the headgear in order to apply the item of headgear to the head.

CLAIM 2. Apparatus of claim 1, wherein the apparatus includes a timer means, and the timer means is so arranged as to automatically switch off the sound producing device after a predetermined period.

CLAIM 3. Apparatus of claim 2, wherein the said period of time, after which the timer automatically switches off the sound producing device, is a few seconds.

CLAIM 4. Apparatus of claim 2, wherein the apparatus is so arranged that upon activation of the activator switch the sound producing device is activated to produce sound for the pre-determined period, irrespective of the period for which the switch is held activated by the person.

CLAIM 5. Apparatus of claim 1, wherein the item of headgear is a cap in which the brim includes a peak or neb, the neb being, in substance, rigid.

CLAIM 6. Apparatus of claim 5, wherein the activator switch is so positioned as to be activated by a person squeezing the centre of the neb between thumb and fingers.

CLAIM 7. Apparatus of claim 5, wherein the neb includes a stiffening board; the stiffening board is provided with a recess or cut-out; and the sound producing device resides in the said recess or cut-out; whereby the sound producing device lies concealed within the thickness of the neb.

CLAIM 8. Apparatus of claim 7, wherein the sound producing device includes a loudspeaker portion, a switch portion, and a

battery/chip portion, and the stiffening board is provided with three separate corresponding cut-outs, and the three portions reside within the cut-outs.

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Examiner's report to the Comptroller under Section 17 (The Search Report)

Application number

9213670.4

Relevant Technical fields

(i) UK Cl (Edition K) A3V; A6S; G5J (JEBA)

(ii) Int Cl (Edition 5) A42B

Search Examiner

D BUCKLEY

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

25.8.92

Documents considered relevant following a search in respect of claims 1 TO 8

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2160759 A (MUSIC WEAR INC) whole document and especially figure 4	1 to 7
X	GB 2160085 A (LOWE) whole document	1 to 7

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

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